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UNITED STATES POLITICAL ADVISER
FOR JAPAN

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Tokyo, February 7, 1948.

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INFO
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ASSUBJECT: Publication entitled Japanese Natural Resources--
A Comprehensive Analysis.

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The Honorable
The Secretary of State,
Washington.

Sir:

I have the honor to report that the Natural Resources Section of General Headquarters, Supreme Commander for the Allied Powers, is in process of completing preparation of a manuscript entitled Japanese Natural Resources-- A Comprehensive Analysis. The Analysis was undertaken to answer the need for an overall investigation of Japanese resource management problems. The report was planned and written by Dr. Edward A. ACKERMAN, Technical Adviser of Natural Resources Section; and the preparation of maps, charts, and photographs was supervised by Mr. Louis M. RICHARD, Jr., Geographic Analyst of Natural Resources Section.

Mr. Ackerman has completed his part of the work and is returning to Harvard University to resume his professorship. Before his departure he and Mr. Richard came to the office of this Mission to acquaint Mr. John M. ALLISON, Chief, Division of Northeast Asian Affairs, with the contents of the analysis. Mr. Allison and members of this Mission expressed interest because the publication apparently contains the most authoritative statistics available concerning the natural resources of Japan and is organized, as stated in the preface, with the following specific objectives:

a. Presentation of facts concerning Japan's present capacity to produce food, fuel, and raw materials; determination of its present self-sufficiency in food, fuel, and raw materials; and description of problems associated with the production of food, fuel, and raw materials.

b. Analysis

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b. Analysis of the long-term productive capacity of Japanese natural resources, and investigation of local peculiarities which bear on the long-term capacity of resources for production.

c. Analysis of the general long-term requirements of food, fuel, and raw materials, and the country's ability to meet those requirements.

d. Analysis of the important inter-relationships of agricultural lands, forests, fisheries, mines, and water supply.

e. Analysis of Japan's general efficiency in the utilization of food, fuel, and raw materials.

f. Analysis of Japan's capacity to increase efficiency of utilization and production of food, fuel, and raw materials.

g. Suggestions as to the effects which Allied and Japanese policy can have on the efficiency of Japanese natural resource utilization and production.

According to the preface, the statistical information and interpretations contained in Japanese Natural Resources--A Comprehensive Analysis are based on: (i) field survey by members of the Natural Resources Section, General Headquarters, Supreme Commander for the Allied Powers; (ii) statistical data obtained from Japanese Government sources; and (iii) statistical data collected by the Occupation Forces since September 1945.

Statistical information from Japanese Government sources is stated to be "subject to the same limitations as all other Japanese statistical information collected in the past. All data have been checked and reviewed by specialists on the staff of General Headquarters, Supreme Commander for the Allied Powers, to the maximum extent possible, but in most instances they must be considered only approximate. Figures therefore have been presented as round numbers wherever feasible. However, even though the margin of error is greater than for the United States or western European countries, the data here used are not likely to be changed enough by future investigation to alter the general conclusions".

As might be expected from the above description, the analysis is extensive and considerable time will therefore probably elapse before it can be published. As has already been mentioned, Mr. Ackerman has completed his part of the work but there is still much statistical material which must be evaluated before final incorporation into the analysis. An extra copy of the manuscript in final typed form has been promised by Mr. Richard when typing is completed and will be forwarded to the

Department

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1/ Department when received. Meanwhile, some indication of the extent of the analysis may be obtained from the general outline of sections, copy enclosed. Section I is devoted to the general character of resources and requirements for Japan; Section II covers possible advances in the efficiency of resource utilization in Japan and associated problems; and Section III is an interpretive summary.

2/ During the short time that the manuscript was left with this Mission for examination, a copy was made of Section III. This is enclosed for use by the Department, although minor changes may be made before final publication. In the summary, Japanese basic problems are reviewed as follows:

Japan in 1948 thus faces some of the most serious longterm food and raw material problems in the world. It is confronted with the necessity of importing for domestic use alone at least one-fifth of its food requirements, one-third of its wood (including fiber) requirements, eighty-eight percent of its petroleum requirements, more than one-half its phosphate, nearly one-quarter of its potash, three-fifths of its iron, four-fifths of its lead, all its aluminum, and nearly all the tin, antimony, manganese and other minor items for eighty million people. For the ninety million people anticipated by 1958 the imports needed will be increased proportionate to the population increase.

The interpretive summary further deals with possible solutions of the problems of food and raw materials: first, by importation, and second, by internal changes in Japan. In a consideration of importation, the summary points out that if Japan can muster enough foreign exchange to maintain a balanced trade account, the solution would be relatively easy. According to the summary, however, serious doubt must be entertained as to Japan's ability to procure adequate exchange for needed credits, because:

- (a) As population increases, requirements for imported materials for domestic use only must rise.
- (b) Japan has only a few domestically produced raw materials from which export goods may be made.
- (c) Reparations payments will add to foreign exchange debits.

(d) World

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- (d) World supply situation in a number of materials that Japan needs most has changed for the worse--food, forest products, petroleum and lead.
- (e) Japanese goods are and will be faced with serious competition in export markets.
- (f) Military fears of other Asiatic countries will lead them to look unfavorably upon extensive Japanese manufacturing development for some time.

The manuscript sums up the situation with respect to importation by stating that the prospect for a balanced foreign trade is not encouraging, although it cannot be considered impossible. The best hopes are indicated to be in trading arrangements with other Asiatic and Southwest Pacific countries.

Since it is uncertain that Japan can achieve an export-import balance, both the Allied Powers and Japan, according to the Interpretive Summary, should be interested in exploring solutions to the problem of providing adequate materials and food from domestic sources by means of:

- (a) Efforts to increase home production.
- (b) Efforts to decrease requirements of materials and food without sacrifice by individual consumers. (The main hope lies in improved industrial processing, preservation and substitution, but progress will be handicapped by deficiencies of scientific personnel and research facilities. Rapidly expanding population also reduces likelihood of conservation measures affecting a decrease in imports. A solution to the population and resource problems must be sought within Japan.)
- (c) 1. Recognition by the Japanese that achievement of a peaceful democratic nation through access to at least enough food and raw materials to provide minimum needs to eliminate want will impose obligations on the Japanese to:
 - a. Increase the rate of production or rate of recovery of every resource.
 - b. Stabilize agricultural lands, forests, and fisheries.
 - c. Promote

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- c. Promote more effective utilization of all materials and food.
 - d. Develop means to pay for necessary imported supplements.
 - e. Actively seek a stabilization of population at the earliest possible date.
2. The Summary suggests that the Allied Powers in turn should recognize the importance of external influence, because Japan cannot succeed without Allied support. The Allied Powers in their own best interests might, therefore, consider the following factors:
- a. Restrictions on Japanese industry should be held to a minimum compatible with security. (Serious consideration should be given to the light metal industry and development of synthetic industries and domestic sources of aluminum and magnesium.)
 - b. Reasonable access to foreign markets must be allowed.
 - c. Effective technical assistance should be made available.
 - d. The reparations program should take into account likely long-term effects of reparations on Japanese natural resources.
 - e. Consideration should be given to the question of access to facilities for food production, particularly as they concern the fishing industry.

In conclusion, it is emphasized that the most important actions relating to Japan's economic future must be carried out by the Japanese. The Allied Nations, however, according to the Summary, are in a position to create a favorable or unfavorable environment for any Japanese action. The Summary ends with an opinion that Allied objectives would seem to be served best by assisting Japan to obtain a stable resource base.

The Natural Resources Section requested that this Mission, in its capacity as Diplomatic Section, examine the entire manuscript and give an opinion as to the

desirability

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desirability of its publication. After examination of the manuscript, this Mission strongly urged that the analysis be published immediately and given wide circulation. This recommendation is based upon the belief that such publication would make available authoritative data in any consideration of Japanese problems.

Mr. Allison suggested that upon publication of the analysis, sufficient copies be sent immediately to Washington for distribution to each member of the Far Eastern Commission and to United States' Missions in countries represented on the Far Eastern Commission. Several copies for use of the Department and other departments of the United States Government would also be sent to Washington.

Prior to his departure from Tokyo, Mr. Ackerman expressed his readiness to call upon the Department, if desired, for the purpose of assisting in any matters that might arise in the premises.

Respectfully yours,

W. J. Sebald
Acting Political Adviser

Enclosures:

1. General outline of publication entitled Japanese Natural Resources--A Comprehensive Analysis.
2. Section III of same publication.

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Enclosure No. 1 to Despatch
No. 79 dated February 7,
1947 from the Office of the
Political Adviser for Japan,
Tokyo, on the subject: "Publi-
cation entitled Japanese
Natural Resources--A Compre-
hensive Analysis."

(COPY)

SECTION I - General Character of Resources and Requirements

- 1 a. Geographic Introduction
- 1 b. Nature of Japanese Material Requirements
- 1 c. (1) Food Sources in Japan.
(2) Physical features influencing agricul-
tural production.
(3) Agricultural land use, and food crop
production.
(4) Fishery Production.
- 1 d. Power and fuel sources
 - (1) General
 - (2) Electric Power
 - (3) Coal
 - (4) Lignite
 - (5) Charcoal and firewood
 - (6) Petroleum
 - (7) Natural gas
 - (8) The total Japanese fuel and power situation
of the immediate future.
- 1 e. (1) Fiber consumption and supply
(2) Likely fiber needs
(3) Past sources of fiber supply
 - a. Domestic new supplies
- (4) Sufficiency of the domestic fiber supply
- 1 f. Construction materials (non-mineral)
 - (1) General
 - (2) Lumber and other wooden materials
 - (3) Bamboo, straw and grass
- 1 g. Construction and industrial minerals
- 1 h. Summary of present production. Outlook from
Japanese natural resources.

SECTION II. Possible Advances in the Efficiency of
Resource Utilization in Japan and Associated
Problems.

Introduction.

- 2 a. (1) Increased mineral production.
(2) Increased forest production.
(3) Increased fiber production.
(4) Long term fuel and power outlook.
(5) Increased food production in agriculture.
(6) The outlook for increased fishery production.
(7) Summary of the long term food production
outlook.

2 b. Better

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- 2 b. Better utilization through conservation, processing, preservation and substitution.
- 2 c. Scientific research, and technical competence in relation to resource utilization.

SECTION III.

Interpretive Summary.

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NATURAL RESOURCES SECTION
REPORT NUMBER
1 January 1948

JAPANESE NATURAL RESOURCES
A COMPREHENSIVE ANALYSIS

SECTION III
INTERPRETATIVE SUMMARY

GENERAL HEADQUARTERS
SUPREME COMMANDER FOR THE ALLIED POWERS
Natural Resources Section

3. Interpretative Summary

Realistic Japanese political and economic policies cannot ignore several fundamental facts about the nation's natural resource situation. Briefly stated, these facts mean that Japan is now dangerously near a downward spiral in its per capita food and raw material supply. The outlook is not bright. If Japan is to attain the level of living comfort which it had during 1930-34, it can succeed only by great effort on its part. Both the basic problems and the obvious solutions may be simply described. The path to achievement of the solutions, however, is exceedingly complex and difficult to chart exactly. It is important for Japan to understand clearly the starkness of the country's future if those solutions are not wholeheartedly sought and finally achieved.

a. The Basic Problems

A good point of departure in reviewing Japan's basic problems is an examination of what they might be if the Japanese population were to be stabilized at the 80 million it will reach in the next year or two. Japan's population will not be stabilized at that level, but the seriousness of the situation even in providing for 80 millions will serve to bring out the gravity of the outlook. At the 80 million level those problems concern the supply of adequate food, fibers, wood, chemical manufacturing minerals, metals, coking coal, and liquid fuels.

(1) Food

The provision of a 2,160 calorie, 70-gram protein daily diet for 80 million people would require approximately 22,000,000 tons (20,000,000 m t) of rice equivalents, including 2,255,000 tons (2,050,000 mt) gross protein content. Within the next five years, assuming an optimum fertilizer supply and normal weather conditions, an annual production of approximately 18,100,000 tons (16,400,000 m t) of rice equivalents (caloric basis) may possibly be reached, including 2,040,000 tons (1,852,000 m t) gross protein content.^{1/} With expectable increases through improved seed, better pest control, improved cultivation, and more attention to animal husbandry, this production eventually may possibly be raised by about 25 percent. The prospect, however, is one in which sufficient domestic food production for 80 million is not certain even in the more distant future. The outlook, therefore, is one of food importation indefinitely, even though domestic food production increases. The size of the importation necessary to provide the 2,160 calorie minimum diet will of course depend on the size of the population, the success of Japanese farmers, scientists, and engineers in raising agricultural

production

^{1/} This calculation assumes a fisheries production equivalent in calories to 610,000 metric tons of rice.

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production, and the maintenance of fishery production at its present level. For the next 15 years, however, it is difficult to visualize a situation in which Japan will not be forced to import 18 to 20 percent of its minimum food requirements in an average year if these requirements are to be met. Within the next few years the need for importation may be 25 percent of requirements. That means an annual food deficit of 5,500,000 tons (5,000,000 m t) of rice equivalents. This requirement alone can create a foreign trade debit of major proportion. It may be regarded as the basic point of departure in economic thought and planning for Japan, since the food requirement can be reduced only by reducing the population or allowing continual under-nourishment.

(2) Fibers

Japan has the resources from which to produce adequate fibers to meet the 12-pound (5.4 kgs) per capita high-strength fiber needs and the 30-pound (13.6 kgs) per capita minimum paper consumption for 80 millions. But such production can be achieved in the immediate future only at the expense of food production, or at the expense of wood for other uses, even if plant facilities for the manufacture of rayon were available. Increasing agricultural fiber production for domestic use will only increase the food importation requirements and correspondingly increase the trade debit. If adequate fiber supply is sought from domestic sources, Japan's present technology will allow it to turn to wood or bamboo as the only domestic raw materials. To the extent that wood cannot supply fiber needs, importation will be necessary. The fiber problem therefore becomes closely connected with the problem of total wood supply and the forest situation. If there is enough wood, fiber importations for domestic use need be made only for special purposes, rather than basic needs.

(3) Wood Supply

The present forest situation does not promise adequate wood on a sustained yield basis to meet requirements anticipated on the basis of present habits of fuel consumption, construction, and the fiber requirements. Against possible requirements of approximately 2.58 billion cubic feet (73 million cu m) of wood for 80 million people; the outlook is for 1.68 billion cubic feet (47.6 million cu m) of accessible annual growth in the next 20 or 30 years with a remote possibility of raising it to 2.1 billion cubic feet (60 million cu m) ultimately. Unless steps are taken to change the pattern of consumption or stabilize the population, by the time growth has risen to 2.1 billion cubic feet (60 million cu m) consumption may have risen to 3.0 billion cubic feet (about 85 million cu m).

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Japan: In its wood supply there are four paths before forests are exhausted, which can happen within 30 or 40 years; (a) Production from home forests on a sustained yield basis, with importation to make up the balance necessary to meet minimum requirements; (b) production from home forests on a sustained yield basis, with sharp reductions in requirements; or (c) a combination of (b) and (c). If forests are permitted to approach exhaustion, grave repercussions are likely in agriculture and power production -- in fact forest exhaustion would mean an eventual complete impoverishment of Japan. If importation is resorted to, the equivalent of 897 million cubic feet (25.4 million cu m) of wood must be imported, whether it comes in the form of logs, lumber, charcoal, pulp, paper, cotton, or other high strength fiber. This would be another tremendous addition to the trade debit for domestic needs. Reduction in wood requirements therefore appears imperative. Substitution of other domestic materials for wood, increased efficiency in utilization, and every other source of a reduction in requirements probably will have to be sought.

(4) Minerals for Chemical Manufacture

In order to keep agricultural production at the level suggested as probable, Japan must have high quantities of potash and phosphate for commercial fertilizer production. In the face of these demands the outlook is one of exceedingly small home production of phosphate and potash materials. About 300,000 tons (272,000 m t) of phosphoric acid and 142,000 tons (129,000 m t) of potassium chloride must be imported annually by 1950. As the land reclamation program progresses additional quantities will be needed. It is estimated that the 1960 import requirements will exceed those of 1950 by 42 percent in the case of phosphate and 65 percent for potassium. Until a successful process is developed for extraction of these materials in quantity from sea water, continued extensive importation appears inevitable.

A third and basic deficiency among the mineral materials for chemical manufacture is salt. In the absence of rock salt deposits, sea water extraction is the only supply. Salt production in Japan at present not only is inefficient and uneconomic but is undertaken at considerable expense to the already deficient wood supply. While the long-run fuel and power outlook would permit salt production equivalent to domestic needs (although probably above world cost), the immediate fuel situation does not. Salt production therefore is being maintained at the expense of deteriorating forests. Importation of salt in the immediate future can assist in bringing balance to the forests. Over the years development of waste heat utilization, additional electric power, and coal production are the keys to the salt situation if sufficient foreign exchange is not forthcoming.

(5) Metals

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(5) Metals

In order to keep its economy in operation for maintenance of the 1930-34 living standard Japan must plan on importation of a number of other minerals. The metals are most important among them.

Japan is deficient in both the basic industrial metals and the secondary metals. Although it has a home production of many, it promises to have adequate production in few. In 1947 the outlook was for importation of iron, lead, aluminum, tin, manganese, antimony, tungsten and nickel. At least 2 1/4 million tons (2 million m t) of imported iron ore (50 percent iron content) will be needed to maintain industry at the anticipated level for 80 million people. In addition 56,000 tons (50,000 m t) of metallic lead, 5,000 tons (4,500 m t) of tin, and lesser amounts of manganese, antimony, tungsten, and nickel also will be required. Actual requirements may be somewhat larger than suggested here if any serious attempt is made at increasing industrial and transportational efficiency. Requirements also may be expected to increase proportionately to population increases. It is further likely that iron ore importations eventually will have to be increased to compensate for declines in domestic production. The 2 1/4 million ton (2 million m t) iron ore importation assumes a 1,680,000 ton (1.5 million m t) domestic production. That probably can be maintained for not more than 10 years. Without ore discoveries within the 10-year period, added importation will be necessary beyond that time.

(6) Coking Coal

Because of the absence of high quality coal in the known Japanese reserves, and the present difficulty of converting domestic coal into blast furnace coke, coking coal will have to be imported. Minimum requirements will be from 825,000 to 1.1 million tons (750,000 to 1 million m t) annually.

(7) Liquid Fuels

Japan's liquid fuels supply remains a weak spot in the country's resource position, as it always has been. An optimistic production estimate would place the petroleum producing capacity of Japan at about 12 percent of the minimum needs for an 80 million population. Future production may be at the rate of 2,040,000 barrels (325,000 kl) a year. If needs are met 15,720,000 barrels (2,500,000 kl) must be imported.^{1/} If importations are impossible the only courses open to Japan are curtailed

automotive

^{1/} "A Possible Program for a Balanced Japanese Economy," p 43.

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automotive transportation or resort to charcoal gas generating units, undesirable in the light of the fuel-wood situation and the deteriorating forests.

(8) Summary of the Problems

Japan in 1948 thus faces some of the most serious longterm food and raw material problems in the world. It is confronted with the necessity of importing for domestic use alone at least one-fifth of its food requirements, one-third of its wood (including fiber) requirements, 88 percent of its petroleum requirements, more than one-half its phosphate, nearly one-quarter of its potash, three-fifths of its iron, four-fifths of its lead, all its aluminum, and nearly all the tin, antimony, manganese and other minor items for 80 million people. For the 90 million people anticipated by 1958 the imports needed will be increased proportionate to the population increase.

b. Possible Solutions

(1) Importation

If Japan can muster enough foreign exchange to maintain a balanced trade account, the solution to this huge problem will be relatively easy. But serious doubt must be entertained as to Japan's ability to procure adequate exchange for the needed credits. The following contingencies must be anticipated:

(a) As population continues to increase requirements for imported materials for domestic use only must rise.

(b) Japan has only a few domestically produced raw materials from which export goods may be made.

In the main exports over the long run must be made mainly from imported materials. To the debits made by importing materials for domestic use must be added the debits of importing materials for export goods. With relatively few exceptions export goods must be made from imported materials, or from domestic materials at the expense of domestic consumption. About the only foreseeable exports which need entail little or no sacrifice of materials for domestic use would be cement, sulfur, camphor, coal (to the extent saleable), agar-agar^{1/}, sodium alginate^{1/}, silk and a few minor products like cultured pearls. Although silk export displaces food or other fiber production for

Japanese

^{1/} Marine products

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Japanese use, production of silk and similar items should be encouraged as markets develop because of the high value per area unit of such production.

(c) The likely necessity of reparations payment will add to the foreign exchange debits, making the national account still harder to balance.

(d) The world supply situation in a number of the materials that Japan needs has changed definitely for the worse within the last decade. The present world food deficit is the most notable of those changes. The forest products situation is only a little better. The petroleum outlook has deteriorated, and the world lead shortage appears likely to continue for some time. Although some of these shortages, including food, may be short-term, Japan may have to pay relatively more for its imports (in terms of its exports) than it did before the war.

(e) Japanese goods are and will be faced with serious competition in export markets. The displacement of silk by nylon is one instance. The growth of modern textile industries within the Asiatic countries with the largest cheap-goods market is another. Lower standards of living in European nations with technical skill equal or superior to Japan also may introduce a new element of competition, as will major technical advances in other industrial nations. Finally, the general reputation for poor quality which Japanese goods have acquired in the past will not help them meet this competition.

(f) It is probable that military fears of other Asiatic countries will lead them to look unfavorably upon extensive Japanese manufacturing development for some time. The prevailing opinion of the Asiatic continent is one which considers any extensive development of Japanese industry a military threat. Until manufacturing facilities of the continent surpass those of Japan this attitude is likely to be a retarding factor in trade relations. The extent of trade is likely to be determined by the acuteness of immediate continental need rather than long-term desirability from an international point of view.

All things considered, the prospect for a balanced foreign trade is not encouraging, although it cannot be considered impossible. If strategic fears can be overcome, and Japan shows a sincerely changed attitude, the best hopes lie in trading arrangements with other Asiatic or Southwest Pacific countries. China has the coal, iron, salt, antimony, and tungsten that Japan needs;

French

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French Indo-China and New Caledonia, coal, iron, phosphate, and nickel; India, the manganese; Siam and Malaya, the tin; Burma, Siam, and Indo-China, rice; Malaya and Sumatra, rubber; the same countries, the Philippines, and the Soviet Union, surplus wood; the Philippines and Indonesia, vegetable oils and sugar; Korea may have surplus fish, and the Indonesian area, petroleum.

All of these areas, excepting the Soviet Union, lack, and may lack for some time the diversified manufacturing goods that Japan can supply. However, because of the serious food deficits elsewhere in Asia and the Southwest Pacific, Japan may not be able to meet its number one deficit from this area. Only vegetable oils and sugar promise to be freely available. The competition from other non-Asiatic manufacturing countries for sale of goods and purchase of food also is not to be forgotten.

(2) Internal changes in Japan

Although Japan may be able to amass enough foreign exchange credits to pay for all needed imports of raw materials and food, this eventuality is far from certain. Both the Allied Powers and Japan therefore should be interested also in exploring solutions to the problem of providing more nearly adequate materials and food from domestic sources.

In the final consideration food and raw materials problems have five aspects: (a) the size of the population; (b) the capacity of the country for production of food and raw materials; (c) its capacity to supplement home production by importation; (d) its technical ability for making the most efficient use of food and raw materials; and (e) the frugality or wastefulness of the consuming public. If thought of importation dominates planning for raw material and food supply, incomplete consideration is being given the possibilities. Moreover, for Japan action on the possible internal improvements is much more controllable, therefore more predictable than the vagaries of foreign exchange. Finally, an improved domestic resource situation would add support to the effort to find foreign exchange. Development of an export program therefore may be profitably accompanied by:

(a) Efforts to increase home production of food and raw materials within the limits of resource stability.

(b) Efforts to decrease requirements of materials and food without sacrifice by individual consumers. In view of the frugality of the average Japanese consumer, the main hope in this direction lies in improved industrial processing, preservation, and substitution of materials.

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But the outlook for improvement in this manner also is clouded. Although no exact inventory is possible, the necessary technical and scientific efforts are likely to be effective in decades rather than years. Deficiencies of personnel and research facilities are likely to hinder progress on the numerous complex problems involved.

In the light of the past record it is doubtful that technical improvements can reduce requirements and increase home production rapidly enough to keep pace with the addition of approximately one million persons added to the population each year. Even though per capita requirements may be reduced, total requirements for materials may increase. The need for imports rises correspondingly.

A workable solution to the resources problem therefore appears possible only if Japan also seeks a reduction in rate of population growth and an early stabilization of the population total. If Japan's population were to remain in the neighborhood of 80 millions, a balanced economy and a decent living for the average Japanese appear probable. If population continues to rise at a rate which will bring it to 90 million in 1958 and 96 million by 1968, there is much less hope.

The principal hope of many Japanese scholars and leaders for stabilizing population at present centers on emigration. They feel that restriction of the growth rate is unnecessary as long as opportunities for settlement exist elsewhere in the world. However, even if political considerations are set aside, Japan must come to realize that there are other crowded countries in the world -- each with an equally valid claim for settlement space elsewhere. The aggregate increase of China, Korea, India, Java, Egypt, Italy, and other less crowded countries outnumbers that of Japan many times. Thus even if opportunities for settlement were divided on a prorata basis, it is likely that only a fraction of the present natural increase in Japan could be accommodated. A solution to the population (and the resource) problem must therefore be sought for and obtained within Japan. If adequate birth control is not achieved, death control is likely to enter finally.

(c) Food, Raw Materials and a Democratic Japan

Democratic and liberal people in Japan and the rest of the world have set certain standards which they hope Japan can achieve in its government. These have been expressed by the Allied Nations on many different

occasions

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occasions from the Potsdam Declaration to the most recent journalistic statements. If Japan is to become the peaceful, democratic nation envisaged, it must have access to at least enough food and raw materials to provide the minimum adequate diet, and enough fuel, shelter, and clothing to eliminate want. Achievement of that level of provision will impose certain obligations upon the Japanese nation, if it is to show its good faith. In their turn the Allied Powers also should be conscious of the situation, if they seriously hope for a democratic Japan.

(1) Japanese Obligations

If Japan is to achieve a balanced economy and a decent living standard, the Japanese Government, Japanese industry, and the Japanese public are obligated to do all in their power toward effecting internal changes in Japan. "All in their power" means the development of co-ordinated, effective, social, economic, and land planning, and effective scientific and technological research. It also means prompt, effective action on planning decisions and scientific or technical developments. Japanese leaders and the Japanese public must realize at the outset several important aspects of their present situation which bear deeply on their future, and on the future of other nations.

(a) Japanese should realize that action now and in the immediate future on matters concerned with food and raw material supply may well determine whether Japan regains a measure of prosperity, or whether it moves toward poverty and social disruption. Japanese now have two choices for their descendants. One path is that of a decent, gradually improving standard of living, stable resources, and the avoidance of war and civil disturbance and all the waste that accompanies them. The other path is that of a population pressing more and more on its food and raw material supply, overproduction from resources until their capacity to produce declines further and further, and a diminishing standard of living. Such a country can be expected to be made up primarily of discontented, if not miserable people, who are tempted by any social, economic, or political promises that include change, no matter how ill founded. More than ever before it is important for Japan to see that its civilization and culture are more likely to progress if quality rather than numbers of people is stressed. The history of Sweden and Switzerland might well be kept in mind.

(b) Japanese should realize that opportunities for emigration are likely to be extremely limited. A home solution for the problem of population increase is the only realistic approach.

(c) Japanese must realize that in the race between technological improvement and population increase their technology has lost ground seriously within the last decade. Moreover, technology and science do not yet show

any promise

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any promise of overtaking the population increase. They therefore must realize that as long as the population increases at the present rate, Japan more and more will have to live on its capital of forests, minerals, fisheries, and soils. It will undoubtedly be a decreasing capital, since long-term development is likely to be lost from sight in the face of immediate necessity for production.

With these things in mind the Japanese Government and the Japanese people are obligated to proceed with multiple aim (a) increase the rate of production or rate of recovery of every resource; (b) stabilize the agricultural lands, forests, and fisheries; (c) promote more effective utilization of all materials and food; (d) develop the means to pay for the necessary imported supplements; and (e) actively seek a stabilization of population at the earliest possible date.

In its actions Japan should willingly submit to surveillance by whatever agency is determined by signatories to the forthcoming treaty. Surveillance should have the object of encouraging the most rapid action possible on all Japanese obligations.

(2) Features of special interest to the Allies

If Japan goes into its future with those aims the Allied Powers in their turn should recognize the importance that external influence may have on Japan's condition. Japan cannot succeed in the suggested actions without Allied support. The Allied Powers must realize that Japan's inadequate resources may be dangerously near a downward spiral in production, and that many different kinds of action will be necessary to avoid a further downward turn. Anything preventing a restoration of stable resources would seem to be contrary to the aid of democratization. The Allied Powers, in their own best interest, as well as that of Japan, might well consider the following factors:

(a) The restrictions on Japanese industry should be the minimum compatible with security. For instance, in view of the likely foreign exchange situation and the critical need for metal imports of all kinds, serious consideration should be given to the reasons for and against Japan's maintaining a light metal industry and developing of domestic sources of aluminum and magnesium. The economies which light metals can effect in fuel use, particularly of petroleum products, and their capacity for substitution for many scarcer metals make them important points in a program for effective resource utilization. Similar consideration should be given to the development of the several synthetic industries in Japan.

Use of

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Use of plastic materials of all sorts can have significant effects in reducing the consumption of wood, metals, and fibers -- all serious raw material problems.

(b) A reasonable access to foreign markets must be allowed Japan, for without markets "access" to food and raw materials outside Japan, as promised in the Potsdam Declaration, is meaningless.

(c) Effective technical assistance should be available to Japan, both in allowing Allied scientists and technologists to work in Japan, and in permitting the training of Japanese research workers, engineers, and administrators abroad.

(d) A reparations program should take into account the likely long-term effects of reparations on Japanese natural resources. A reparations program which applies pressure, either directly or indirectly to food resources, forests, or metal mining may create serious long-term difficulties, and may minimize Japan's ability to pay reparations. A few Japanese materials may be considered the basis for export production (and therefore current reparations payments), but they are very few. Cement,^{1/} sulfur and chemicals based on sulfur,^{1/} coal, ceramic materials, nitrate fertilizers ^{1/}, and certain fishery or agricultural specialities (agar-agar, sodium alginate, silk, etc) are the main possibilities. Reparations from current production which demand metals, wood, or fibers in quantity, unless allowance is made for importation of materials, can seriously affect Japan's slim opportunity of reaching a balanced economy and stable natural resources. Reparations from capital equipment which draw heavily on electrical generating plants may have similar adverse effects in the long run. The serious forest situation can only be brought into balance by reducing fuelwood consumption, and the best hope for such reduction lies in additions to generating capacity. If the forests deteriorate further, repercussions on food production may not be long coming. Already danger signs have appeared in the 1947 floods and their destruction of agricultural lands. Withdrawal of coal mining equipment or plants connected with coal mine operation can be placed in the same class. Reparations from current production which make the maximum use of Japan's large labor supply would seem to offer Japan the best chance eventually of bringing its economy and resources in order, and for discharging most fully the heavy obligations which Japan has incurred because of its past military action.

(e) Consideration should be given the question
of access

^{1/} Assuming that adequate processing facilities are developed

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of access to facilities for food production, particularly as they concern the fishing industry. However, certain limiting factors will have to be considered. Japan should not expect access to:

- 1 Areas of obvious strategic importance to the Allied Nations
- 2 Areas which are adjacent to other nations and are fully managed and exploited
- 3 Areas within which Japanese producers are obviously inefficient by world standards

"Access" furthermore should be granted only on conditions which guarantee strict observance of accepted conservational regulations.

Within the limits circumscribed by these considerations, however, there are fishing areas which could be used by Japan and are now outside the authorized fishing area.

These fishing grounds can be effectively exploited from Japan. Japan has the fishing skill, the fishing equipment, the market, and the need for food. Although the food problem can never be solved through the fishing industry alone, Japan's food sources in relation to requirements will be so limited that opportunity for further development of fishing must be seriously considered as long as there are poorly exploited fisheries in her neighborhood.

The solutions to Japan's problems are many-sided, and they can receive assistance from sympathetic Allied action. Such action need not be indulgent, but it can be understanding. The most important actions relating to Japan's economic future must, of course, be Japanese -- actions like scientific effort to increase production, scientific effort toward efficient consumption, and stabilization of population. The Allied Nations, however, have it within their power to create a favorable or unfavorable environment for Japanese action. Allied objectives would seem to be served best by assisting Japan to a stable resource base.

OFFICE OF INTERNATIONAL TRADE UNITED STATES POLITICAL ADVISER FOR JAPAN DIVISION OF NORTHEAST ASIAN AFFAIRS

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Tokyo, February 7, 1948.

No. 79

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INTERNATIONAL RESOURCES *encatt*
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FEB 25 1948
DEPARTMENT OF STATE

SUBJECT: Publication entitled Japanese Natural Resources-- A Comprehensive Analysis.

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FEB 19 AM 10 17
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The Honorable
The Secretary of State,
Washington.

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I have the honor to report that the Natural Resources Section of General Headquarters, Supreme Commander for the Allied Powers, is in process of completing preparation of a manuscript entitled Japanese Natural Resources-- A Comprehensive Analysis. The analysis was undertaken to answer the need for an overall investigation of Japanese resource management problems. The report was planned and written by Dr. Edward A. ACKERMAN, Technical Adviser of Natural Resources Section; and the preparation of maps, charts, and photographs was supervised by Mr. Louis M. RICHARD, Jr., Geographic Analyst of Natural Resources Section.

Mr. Ackerman has completed his part of the work and is returning to Harvard University to resume his professorship. Before his departure he and Mr. Richard came to the office of this Mission to acquaint Mr. John M. ALLISON, Chief, Division of Northeast Asian Affairs, with the contents of the analysis. Mr. Allison and members of this Mission expressed interest because the publication apparently contains the most authoritative statistics available concerning the natural resources of Japan and is organized, as stated in the preface, with the following specific objectives:

- a. Presentation of facts concerning Japan's present capacity to produce food, fuel, and raw materials; determination of its present self-sufficiency in food, fuel, and raw materials; and description of problems associated with the production of food, fuel, and raw materials.

b. Analysis

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Tokyo's No. 79,
February 7, 1948.

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b. Analysis of the long-term productive capacity of Japanese natural resources, and investigation of local peculiarities which bear on the long-term capacity of resources for production.

c. Analysis of the general long-term requirements of food, fuel, and raw materials, and the country's ability to meet those requirements.

d. Analysis of the important inter-relationships of agricultural lands, forests, fisheries, mines, and water supply.

e. Analysis of Japan's general efficiency in the utilization of food, fuel, and raw materials.

f. Analysis of Japan's capacity to increase efficiency of utilization and production of food, fuel, and raw materials.

g. Suggestions as to the effects which Allied and Japanese policy can have on the efficiency of Japanese natural resource utilization and production.

According to the preface, the statistical information and interpretations contained in Japanese Natural Resources--A Comprehensive Analysis are based on: (i) field survey by members of the Natural Resources Section, General Headquarters, Supreme Commander for the Allied Powers; (ii) statistical data obtained from Japanese Government sources; and (iii) statistical data collected by the Occupation Forces since September 1945.

Statistical information from Japanese Government sources is stated to be "subject to the same limitations as all other Japanese statistical information collected in the past. All data have been checked and reviewed by specialists on the staff of General Headquarters, Supreme Commander for the Allied Powers, to the maximum extent possible, but in most instances they must be considered only approximate. Figures therefore have been presented as round numbers wherever feasible. However, even though the margin of error is greater than for the United States or western European countries, the data here used are not likely to be changed enough by future investigation to alter the general conclusions".

As might be expected from the above description, the analysis is extensive and considerable time will therefore probably elapse before it can be published. As has already been mentioned, Mr. Ackerman has completed his part of the work but there is still much statistical material which must be evaluated before final incorporation into the analysis. An extra copy of the manuscript in final typed form has been promised by Mr. Richard when typing is completed and will be forwarded to the

Department

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Department when received. Meanwhile, some indication of the extent of the analysis may be obtained from the general outline of sections, copy enclosed. Section I is devoted to the general character of resources and requirements for Japan; Section II covers possible advances in the efficiency of resource utilization in Japan and associated problems; and Section III is an interpretive summary.

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During the short time that the manuscript was left with this Mission for examination, a copy was made of Section III. This is enclosed for use by the Department, although minor changes may be made before final publication. In the summary, Japanese basic problems are reviewed as follows:

Japan in 1948 thus faces some of the most serious longterm food and raw material problems in the world. It is confronted with the necessity of importing for domestic use alone at least one-fifth of its food requirements, one-third of its wood (including fiber) requirements, eighty-eight percent of its petroleum requirements, more than one-half its phosphate, nearly one-quarter of its potash, three-fifths of its iron, four-fifths of its lead, all its aluminum, and nearly all the tin, antimony, manganese and other minor items for eighty million people. For the ninety million people anticipated by 1958 the imports needed will be increased proportionate to the population increase.

The interpretive summary further deals with possible solutions of the problems of food and raw materials: first, by importation, and second, by internal changes in Japan. In a consideration of importation, the summary points out that if Japan can muster enough foreign exchange to maintain a balanced trade account, the solution would be relatively easy. According to the summary, however, serious doubt must be entertained as to Japan's ability to procure adequate exchange for needed credits, because:

- (a) As population increases, requirements for imported materials for domestic use only must rise.
- (b) Japan has only a few domestically produced raw materials from which export goods may be made.
- (c) Reparations payments will add to foreign exchange debits.
- (d) World

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- (d) World supply situation in a number of materials that Japan needs most has changed for the worse--food, forest products, petroleum and lead.
- (e) Japanese goods are and will be faced with serious competition in export markets.
- (f) Military fears of other Asiatic countries will lead them to look unfavorably upon extensive Japanese manufacturing development for some time.

The manuscript sums up the situation with respect to importation by stating that the prospect for a balanced foreign trade is not encouraging, although it cannot be considered impossible. The best hopes are indicated to be in trading arrangements with other Asiatic and Southwest Pacific countries.

Since it is uncertain that Japan can achieve an export-import balance, both the Allied Powers and Japan, according to the Interpretive Summary, should be interested in exploring solutions to the problem of providing adequate materials and food from domestic sources by means of:

- (a) Efforts to increase home production.
- (b) Efforts to decrease requirements of materials and food without sacrifice by individual consumers. (The main hope lies in improved industrial processing, preservation and substitution, but progress will be handicapped by deficiencies of scientific personnel and research facilities. Rapidly expanding population also reduces likelihood of conservation measures affecting a decrease in imports. A solution to the population and resource problems must be sought within Japan.)
- (c) 1. Recognition by the Japanese that achievement of a peaceful democratic nation through access to at least enough food and raw materials to provide minimum needs to eliminate want will impose obligations on the Japanese to:
 - a. Increase the rate of production or rate of recovery of every resource.
 - b. Stabilize agricultural lands, forests, and fisheries.
 - c. Promote

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- c. Promote more effective utilization of all materials and food.
 - d. Develop means to pay for necessary imported supplements.
 - e. Actively seek a stabilization of population at the earliest possible date.
2. The Summary suggests that the Allied Powers in turn should recognize the importance of external influence, because Japan cannot succeed without Allied support. The Allied Powers in their own best interests might, therefore, consider the following factors:
- a. Restrictions on Japanese industry should be held to a minimum compatible with security. (Serious consideration should be given to the light metal industry and development of synthetic industries and domestic sources of aluminum and magnesium.)
 - b. Reasonable access to foreign markets must be allowed.
 - c. Effective technical assistance should be made available.
 - d. The reparations program should take into account likely long-term effects of reparations on Japanese natural resources.
 - e. Consideration should be given to the question of access to facilities for food production, particularly as they concern the fishing industry.

In conclusion, it is emphasized that the most important actions relating to Japan's economic future must be carried out by the Japanese. The Allied Nations, however, according to the Summary, are in a position to create a favorable or unfavorable environment for any Japanese action. The Summary ends with an opinion that Allied objectives would seem to be served best by assisting Japan to obtain a stable resource base.

The Natural Resources Section requested that this Mission, in its capacity as Diplomatic Section, examine the entire manuscript and give an opinion as to the

desirability

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desirability of its publication. After examination of the manuscript, this Mission strongly urged that the analysis be published immediately and given wide circulation. This recommendation is based upon the belief that such publication would make available authoritative data in any consideration of Japanese problems.

Mr. Allison suggested that upon publication of the analysis, sufficient copies be sent immediately to Washington for distribution to each member of the Far Eastern Commission and to United States' missions in countries represented on the Far Eastern Commission. Several copies for use of the Department and other departments of the United States Government would also be sent to Washington.

Prior to his departure from Tokyo, Mr. Ackerman expressed his readiness to call upon the Department, if desired, for the purpose of assisting in any matters that might arise in the premises.

Respectfully yours,

W. J. Sebald

W. J. Sebald
Acting Political Adviser

Enclosures: *ATT*

1. General outline of publication entitled Japanese Natural Resources--A Comprehensive Analysis.
2. Section III of same publication.

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Enclosure No. 1 to Despatch
No. 79 dated February 7,
1947 from the Office of the
Political Adviser for Japan,
Tokyo, on the subject: "Publi-
cation entitled Japanese
Natural Resources--A Compre-
hensive Analysis."

(COPY)

SECTION I - General Character of Resources and Requirements

- 1 a. Geographic Introduction
- 1 b. Nature of Japanese Material Requirements
- 1 c. (1) Food Sources in Japan.
(2) Physical features influencing agricul-
tural production.
(3) Agricultural land use, and food crop
production.
(4) Fishery Production.
- 1 d. Power and fuel sources
(1) General
(2) Electric Power
(3) Coal
(4) Lignite
(5) Charcoal and firewood
(6) Petroleum
(7) Natural gas
(8) The total Japanese fuel and power situation
of the immediate future.
- 1 e. (1) Fiber consumption and supply
(2) Likely fiber needs
(3) Past sources of fiber supply
 a. Domestic new supplies
(4) Sufficiency of the domestic fiber supply
- 1 f. Construction materials (non-mineral)
(1) General
(2) Lumber and other wooden materials
(3) Bamboo, straw and grass
- 1 g. Construction and industrial minerals
- 1 h. Summary of present production. Outlook from
Japanese natural resources.

SECTION II. Possible Advances in the Efficiency of
Resource Utilization in Japan and Associated
Problems.

Introduction.

- 2 a. (1) Increased mineral production.
(2) Increased forest production.
(3) Increased fiber production.
(4) Long term fuel and power outlook.
(5) Increased food production in agriculture.
(6) The outlook for increased fishery production.
(7) Summary of the long term food production
outlook.

2 b. Better

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- 2 b. Better utilization through conservation, processing, preservation and substitution.
- 2 c. Scientific research, and technical competence in relation to resource utilization.

SECTION III.

Interpretive Summary.

NATURAL RESOURCES SECTION
REPORT NUMBER
1 January 1948

J A P A N E S E N A T U R A L R E S O U R C E S
A C O M P R E H E N S I V E A N A L Y S I S

SECTION III
INTERPRETATIVE SUMMARY

GENERAL HEADQUARTERS
SUPREME COMMANDER FOR THE ALLIED POWERS
Natural Resources Section

3. Interpretative Summary

Realistic Japanese political and economic policies cannot ignore several fundamental facts about the nation's natural resource situation. Briefly stated, these facts mean that Japan is now dangerously near a downward spiral in its per capita food and raw material supply. The outlook is not bright. If Japan is to attain the level of living comfort which it had during 1930-34, it can succeed only by great effort on its part. Both the basic problems and the obvious solutions may be simply described. The path to achievement of the solutions, however, is exceedingly complex and difficult to chart exactly. It is important for Japan to understand clearly the starkness of the country's future if those solutions are not wholeheartedly sought and finally achieved.

a. The Basic Problems

A good point of departure in reviewing Japan's basic problems is an examination of what they might be if the Japanese population were to be stabilized at the 80 million it will reach in the next year or two. Japan's population will not be stabilized at that level, but the seriousness of the situation even in providing for 80 millions will serve to bring out the gravity of the outlook. At the 80 million level those problems concern the supply of adequate food, fibers, wood, chemical manufacturing minerals, metals, coking coal, and liquid fuels.

(1) Food

The provision of a 2,160 calorie, 70-gram protein daily diet for 80 million people would require approximately 22,000,000 tons (20,000,000 m t) of rice equivalents, including 2,255,000 tons (2,050,000 mt) gross protein content. Within the next five years, assuming an optimum fertilizer supply and normal weather conditions, an annual production of approximately 18,100,000 tons (16,400,000 m t) of rice equivalents (caloric basis) may possibly be reached, including 2,040,000 tons (1,852,000 m t) gross protein content.^{1/} With expectable increases through improved seed, better pest control, improved cultivation, and more attention to animal husbandry, this production eventually may possibly be raised by about 25 percent. The prospect, however, is one in which sufficient domestic food production for 80 million is not certain even in the more distant future. The outlook, therefore, is one of food importation indefinitely, even though domestic food production increases. The size of the importation necessary to provide the 2,160 calorie minimum diet will of course depend on the size of the population, the success of Japanese farmers, scientists, and engineers in raising agricultural

production

^{1/} This calculation assumes a fisheries production equivalent in calories to 610,000 metric tons of rice.

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production, and the maintenance of fishery production at its present level. For the next 15 years, however, it is difficult to visualize a situation in which Japan will not be forced to import 18 to 20 percent of its minimum food requirements in an average year if these requirements are to be met. Within the next few years the need for importation may be 25 percent of requirements. That means an annual food deficit of 5,500,000 tons (5,000,000 m t) of rice equivalents. This requirement alone can create a foreign trade debit of major proportion. It may be regarded as the basic point of departure in economic thought and planning for Japan, since the food requirement can be reduced only by reducing the population or allowing continual under-nourishment.

(2) Fibers

Japan has the resources from which to produce adequate fibers to meet the 12-pound (5.4 kgs) per capita high-strength fiber needs and the 30-pound (13.6 kgs) per capita minimum paper consumption for 80 millions. But such production can be achieved in the immediate future only at the expense of food production, or at the expense of wood for other uses, even if plant facilities for the manufacture of rayon were available. Increasing agricultural fiber production for domestic use will only increase the food importation requirements and correspondingly increase the trade debit. If adequate fiber supply is sought from domestic sources, Japan's present technology will allow it to turn to wood or bamboo as the only domestic raw materials. To the extent that wood cannot supply fiber needs, importation will be necessary. The fiber problem therefore becomes closely connected with the problem of total wood supply and the forest situation. If there is enough wood, fiber importations for domestic use need be made only for special purposes, rather than basic needs.

(3) Wood Supply

The present forest situation does not promise adequate wood on a sustained yield basis to meet requirements anticipated on the basis of present habits of fuel consumption, construction, and the fiber requirements. Against possible requirements of approximately 2.58 billion cubic feet (73 million cu m) of wood for 80 million people, the outlook is for 1.68 billion cubic feet (47.6 million cu m) of accessible annual growth in the next 20 or 30 years with a remote possibility of raising it to 2.1 billion cubic feet (60 million cu m) ultimately. Unless steps are taken to change the pattern of consumption or stabilize the population, by the time growth has risen to 2.1 billion cubic feet (60 million cu m) consumption may have risen to 3.0 billion cubic feet (about 85 million cu m).

In its

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In its wood supply there are four paths before Japan: (a) Production from home forests until those forests are exhausted, which can happen within 30 or 40 years; (b) production from home forests on a sustained yield basis, with importation to make up the balance necessary to meet minimum requirements; (c) production from home forests on a sustained yield basis, with sharp reductions in requirements; or (d) a combination of (b) and (c). If forests are permitted to approach exhaustion, grave repercussions are likely in agriculture and power production -- in fact forest exhaustion would mean an eventual complete impoverishment of Japan. If importation is resorted to, the equivalent of 897 million cubic feet (25.4 million cu m) of wood must be imported, whether it comes in the form of logs, lumber, charcoal, pulp, paper, cotton, or other high strength fiber. This would be another tremendous addition to the trade debit for domestic needs. Reduction in wood requirements therefore appears imperative. Substitution of other domestic materials for wood, increased efficiency in utilization, and every other source of a reduction in requirements probably will have to be sought.

(4) Minerals for Chemical Manufacture

In order to keep agricultural production at the level suggested as probable, Japan must have huge quantities of potash and phosphate for commercial fertilizer production. In the face of these demands the outlook is one of exceedingly small home production of phosphate and potash materials. About 300,000 tons (272,000 m t) of phosphoric acid and 142,000 tons (129,000 m t) of potassium chloride must be imported annually by 1950. As the land reclamation program progresses additional quantities will be needed. It is estimated that the 1960 import requirements will exceed those of 1950 by 42 percent in the case of phosphate and 65 percent for potassium. Until a successful process is developed for extraction of these materials in quantity from sea water, continued extensive importation appears inevitable.

A third and basic deficiency among the mineral materials for chemical manufacture is salt. In the absence of rock salt deposits, sea water extraction is the only supply. Salt production in Japan at present not only is inefficient and uneconomic but is undertaken at considerable expense to the already deficient wood supply. While the long-run fuel and power outlook would permit salt production equivalent to domestic needs (although probably above world cost), the immediate fuel situation does not. Salt production therefore is being maintained at the expense of deteriorating forests. Importation of salt in the immediate future can assist in bringing balance to the forests. Over the years development of waste heat utilization, additional electric power, and coal production are the keys to the salt situation if sufficient foreign exchange is not forthcoming.

(5) Metals

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(5) Metals

In order to keep its economy in operation for maintenance of the 1930-34 living standard Japan must plan on importation of a number of other minerals. The metals are most important among them.

Japan is deficient in both the basic industrial metals and the secondary metals. Although it has a home production of many, it promises to have adequate production in few. In 1947 the outlook was for importation of iron, lead, aluminum, tin, manganese, antimony, tungsten and nickel. At least 2 1/4 million tons (2 million m t) of imported iron ore (50 percent iron content) will be needed to maintain industry at the anticipated level for 80 million people. In addition 56,000 tons (50,000 m t) of metallic lead, 5,000 tons (4,500 m t) of tin, and lesser amounts of manganese, antimony, tungsten, and nickel also will be required. Actual requirements may be somewhat larger than suggested here if any serious attempt is made at increasing industrial and transportation efficiency. Requirements also may be expected to increase proportionately to population increases. It is further likely that iron ore importations eventually will have to be increased to compensate for declines in domestic production. The 2 1/4 million ton (2 million m t) iron ore importation assumes a 1,680,000 ton (1.5 million m t) domestic production. That probably can be maintained for not more than 10 years. Without ore discoveries within the 10-year period, added importation will be necessary beyond that time.

(6) Coking Coal

Because of the absence of high quality coal in the known Japanese reserves, and the present difficulty of converting domestic coal into blast furnace coke, coking coal will have to be imported. Minimum requirements will be from 825,000 to 1.1 million tons (750,000 to 1 million m t) annually.

(7) Liquid Fuels

Japan's liquid fuels supply remains a weak spot in the country's resource position, as it always has been. An optimistic production estimate would place the petroleum producing capacity of Japan at about 12 percent of the minimum needs for an 80 million population. Future production may be at the rate of 2,040,000 barrels (325,000 kl) a year. If needs are met 15,720,000 barrels (2,500,000 kl) must be imported.^{1/} If importations are impossible the only courses open to Japan are curtailed

automotive

^{1/} "A Possible Program for a Balanced Japanese Economy," p 43.

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automotive transportation or resort to charcoal gas generating units, undesirable in the light of the fuel-wood situation and the deteriorating forests.

(8) Summary of the Problems

Japan in 1948 thus faces some of the most serious longterm food and raw material problems in the world. It is confronted with the necessity of importing for domestic use alone at least one-fifth of its food requirements, one-third of its wood (including fiber) requirements, 88 percent of its petroleum requirements, more than one-half its phosphate, nearly one-quarter of its potash, three-fifths of its iron, four-fifths of its lead, all its aluminum, and nearly all the tin, antimony, manganese and other minor items for 80 million people. For the 90 million people anticipated by 1958 the imports needed will be increased proportionate to the population increase.

b. Possible Solutions

(1) Importation

If Japan can muster enough foreign exchange to maintain a balanced trade account, the solution to this huge problem will be relatively easy. But serious doubt must be entertained as to Japan's ability to procure adequate exchange for the needed credits. The following contingencies must be anticipated:

(a) As population continues to increase requirements for imported materials for domestic use only must rise.

(b) Japan has only a few domestically produced raw materials from which export goods may be made.

In the main exports over the long run must be made mainly from imported materials. To the debits made by importing materials for domestic use must be added the debits of importing materials for export goods. With relatively few exceptions export goods must be made from imported materials, or from domestic materials at the expense of domestic consumption. About the only foreseeable exports which need entail little or no sacrifice of materials for domestic use would be cement, sulfur, camphor, coal (to the extent saleable), agar-agar^{1/}, sodium alginate ^{1/}, silk and a few minor products like cultured pearls. Although silk export displaces food or other fiber production for

Japanese

^{1/} Marine products

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Japanese use, production of silk and similar items should be encouraged as markets develop because of the high value per area unit of such production.

(c) The likely necessity of reparations payment will add to the foreign exchange debits, making the national account still harder to balance.

(d) The world supply situation in a number of the materials that Japan needs has changed definitely for the worse within the last decade. The present world food deficit is the most notable of those changes. The forest products situation is only a little better. The petroleum outlook has deteriorated, and the world lead shortage appears likely to continue for some time. Although some of these shortages, including food, may be short-term, Japan may have to pay relatively more for its imports (in terms of its exports) than it did before the war.

(e) Japanese goods are and will be faced with serious competition in export markets. The displacement of silk by nylon is one instance. The growth of modern textile industries within the Asiatic countries with the largest cheap-goods market is another. Lower standards of living in European nations with technical skill equal or superior to Japan also may introduce a new element of competition, as will major technical advances in other industrial nations. Finally, the general reputation for poor quality which Japanese goods have acquired in the past will not help them meet this competition.

(f) It is probable that military fears of other Asiatic countries will lead them to look unfavorably upon extensive Japanese manufacturing development for some time. The prevailing opinion of the Asiatic continent is one which considers any extensive development of Japanese industry a military threat. Until manufacturing facilities of the continent surpass those of Japan this attitude is likely to be a retarding factor in trade relations. The extent of trade is likely to be determined by the acuteness of immediate continental need rather than long-term desirability from an international point of view.

All things considered, the prospect for a balanced foreign trade is not encouraging, although it cannot be considered impossible. If strategic fears can be overcome, and Japan shows a sincerely changed attitude, the best hopes lie in trading arrangements with other Asiatic or Southwest Pacific countries. China has the coal, iron, salt, antimony, and tungsten that Japan needs;

French

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French Indo-China and New Caledonia, coal, iron, phosphate, and nickel; India, the manganese; Siam and Malaya, the tin; Burma, Siam, and Indo-China, rice; Malaya and Sumatra, rubber; the same countries, the Philippines, and the Soviet Union, surplus wood; the Philippines and Indonesia, vegetable oils and sugar; Korea may have surplus fish, and the Indonesian area, petroleum.

All of these areas, excepting the Soviet Union, lack, and may lack for some time the diversified manufacturing goods that Japan can supply. However, because of the serious food deficits elsewhere in Asia and the Southwest Pacific, Japan may not be able to meet its number one deficit from this area. Only vegetable oils and sugar promise to be freely available. The competition from other non-Asiatic manufacturing countries for sale of goods and purchase of food also is not to be forgotten.

(2) Internal changes in Japan

Although Japan may be able to amass enough foreign exchange credits to pay for all needed imports of raw materials and food, this eventuality is far from certain. Both the Allied Powers and Japan therefore should be interested also in exploring solutions to the problem of providing more nearly adequate materials and food from domestic sources.

In the final consideration food and raw materials problems have five aspects: (a) the size of the population; (b) the capacity of the country for production of food and raw materials; (c) its capacity to supplement home production by importation; (d) its technical ability for making the most efficient use of food and raw materials; and (e) the frugality or wastefulness of the consuming public. If thought of importation dominates planning for raw material and food supply, incomplete consideration is being given the possibilities. Moreover, for Japan action on the possible internal improvements is much more controllable, therefore more predictable than the vagaries of foreign exchange. Finally, an improved domestic resource situation would add support to the effort to find foreign exchange. Development of an export program therefore may be profitably accompanied by:

(a) Efforts to increase home production of food and raw materials within the limits of resource stability.

(b) Efforts to decrease requirements of materials and food without sacrifice by individual consumers. In view of the frugality of the average Japanese consumer, the main hope in this direction lies in improved industrial processing, preservation, and substitution of materials.

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But the outlook for improvement in this manner also is clouded. Although no exact inventory is possible, the necessary technical and scientific efforts are likely to be effective in decades rather than years. Deficiencies of personnel and research facilities are likely to hinder progress on the numerous complex problems involved.

In the light of the past record it is doubtful that technical improvements can reduce requirements and increase home production rapidly enough to keep pace with the addition of approximately one million persons added to the population each year. Even though per capita requirements may be reduced, total requirements for materials may increase. The need for imports rises correspondingly.

A workable solution to the resources problem therefore appears possible only if Japan also seeks a reduction in rate of population growth and an early stabilization of the population total. If Japan's population were to remain in the neighborhood of 80 millions, a balanced economy and a decent living for the average Japanese appear probable. If population continues to rise at a rate which will bring it to 90 million in 1958 and 96 million by 1968, there is much less hope.

The principal hope of many Japanese scholars and leaders for stabilizing population at present centers on emigration. They feel that restriction of the growth rate is unnecessary as long as opportunities for settlement exist elsewhere in the world. However, even if political considerations are set aside, Japan must come to realize that there are other crowded countries in the world -- each with an equally valid claim for settlement space elsewhere. The aggregate increase of China, Korea, India, Java, Egypt, Italy, and other less crowded countries outnumber that of Japan many times. Thus even if opportunities for settlement were divided on a prorata basis, it is likely that only a fraction of the present natural increase in Japan could be accommodated. A solution to the population (and the resource) problem must therefore be sought for and obtained within Japan. If adequate birth control is not achieved, death control is likely to enter finally.

(c) Food, Raw Materials and a Democratic Japan

Democratic and liberal people in Japan and the rest of the world have set certain standards which they hope Japan can achieve in its government. These have been expressed by the Allied Nations on many different

occasions

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occasions from the Potsdam Declaration to the most recent journalistic statements. If Japan is to become the peaceful, democratic nation envisaged, it must have access to at least enough food and raw materials to provide the minimum adequate diet, and enough fuel, shelter, and clothing to eliminate want. Achievement of that level of provision will impose certain obligations upon the Japanese nation, if it is to show its good faith. In their turn the Allied Powers also should be conscious of the situation, if they seriously hope for a democratic Japan.

(1) Japanese Obligations

If Japan is to achieve a balanced economy and a decent living standard, the Japanese Government, Japanese industry, and the Japanese public are obligated to do all in their power toward effecting internal changes in Japan. "All in their power" means the development of co-ordinated, effective, social, economic, and land planning, and effective scientific and technological research. It also means prompt, effective action on planning decisions and scientific or technical developments. Japanese leaders and the Japanese public must realize at the outset several important aspects of their present situation which bear deeply on their future, and on the future of other nations.

(a) Japanese should realize that action now and in the immediate future on matters concerned with food and raw material supply may well determine whether Japan regains a measure of prosperity, or whether it moves toward poverty and social disruption. Japanese now have two choices for their descendants. One path is that of a decent, gradually improving standard of living, stable resources, and the avoidance of war and civil disturbance and all the waste that accompanies them. The other path is that of a population pressing more and more on its food and raw material supply, overproduction from resources until their capacity to produce declines further and further, and a diminishing standard of living. Such a country can be expected to be made up primarily of discontented, if not miserable people, who are tempted by any social, economic, or political promises that include change, no matter how ill founded. More than ever before it is important for Japan to see that its civilization and culture are more likely to progress if quality rather than numbers of people is stressed. The history of Sweden and Switzerland might well be kept in mind.

(b) Japanese should realize that opportunities for emigration are likely to be extremely limited. A home solution for the problem of population increase is the only realistic approach.

(c) Japanese must realize that in the race between technological improvement and population increase their technology has lost ground seriously within the last decade. Moreover, technology and science do not yet show

any promise

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any promise of overtaking the population increase. They therefore must realize that as long as the population increases at the present rate, Japan more and more will have to live on its capital of forests, minerals, fisheries, and soils. It will undoubtedly be a decreasing capital, since long-term development is likely to be lost from sight in the face of immediate necessity for production.

With these things in mind the Japanese Government and the Japanese people are obligated to proceed with multiple aim (a) increase the rate of production or rate of recovery of every resource; (b) stabilize the agricultural lands, forests, and fisheries; (c) promote more effective utilization of all materials and food; (d) develop the means to pay for the necessary imported supplements; and (e) actively seek a stabilization of population at the earliest possible date.

In its actions Japan should willingly submit to surveillance by whatever agency is determined by signatories to the forthcoming treaty. Surveillance should have the object of encouraging the most rapid action possible on all Japanese obligations.

(2) Features of special interest to the Allies

If Japan goes into its future with those aims the Allied Powers in their turn should recognize the importance that external influence may have on Japan's condition. Japan cannot succeed in the suggested actions without Allied support. The Allied Powers must realize that Japan's inadequate resources may be dangerously near a downward spiral in production, and that many different kinds of action will be necessary to avoid a further downward turn. Anything preventing a restoration of stable resources would seem to be contrary to the aid of democratization. The Allied Powers, in their own best interest, as well as that of Japan, might well consider the following factors:

(a) The restrictions on Japanese industry should be the minimum compatible with security. For instance, in view of the likely foreign exchange situation and the critical need for metal imports of all kinds, serious consideration should be given to the reasons for and against Japan's maintaining a light metal industry and developing of domestic sources of aluminum and magnesium. The economies which light metals can effect in fuel use, particularly of petroleum products, and their capacity for substitution for many scarcer metals make them important points in a program for effective resource utilization. Similar consideration should be given to the development of the several synthetic industries in Japan.

Use of

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Use of plastic materials of all sorts can have significant effects in reducing the consumption of wood, metals, and fibers -- all serious raw material problems.

(b) A reasonable access to foreign markets must be allowed Japan, for without markets "access" to food and raw materials outside Japan, as promised in the Potsdam Declaration, is meaningless.

(c) Effective technical assistance should be available to Japan, both in allowing Allied scientists and technologists to work in Japan, and in permitting the training of Japanese research workers, engineers, and administrators abroad.

(d) A reparations program should take into account the likely long-term effects of reparations on Japanese natural resources. A reparations program which applies pressure, either directly or indirectly to food resources, forests, or metal mining may create serious long-term difficulties, and may minimize Japan's ability to pay reparations. A few Japanese materials may be considered the basis for export production (and therefore current reparations payments), but they are very few. Cement,^{1/} sulfur and chemicals based on sulfur,^{1/} coal, ceramic materials, nitrate fertilizers ^{1/}, and certain fishery or agricultural specialities (agar-agar, sodium alginate, silk, etc) are the main possibilities. Reparations from current production which demand metals, wood, or fibers in quantity, unless allowance is made for importation of materials, can seriously affect Japan's slim opportunity of reaching a balanced economy and stable natural resources. Reparations from capital equipment which draw heavily on electrical generating plants may have similar adverse effects in the long run. The serious forest situation can only be brought into balance by reducing fuelwood consumption, and the best hope for such reduction lies in additions to generating capacity. If the forests deteriorate further, repercussions on food production may not be long coming. Already danger signs have appeared in the 1947 floods and their destruction of agricultural lands. Withdrawal of coal mining equipment or plants connected with coal mine operation can be placed in the same class. Reparations from current production which make the maximum use of Japan's large labor supply would seem to offer Japan the best chance eventually of bringing its economy and resources in order, and for discharging most fully the heavy obligations which Japan has incurred because of its past military action.

(e) Consideration should be given the question
of access

^{1/} Assuming that adequate processing facilities are developed

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of access to facilities for food production, particularly as they concern the fishing industry. However, certain limiting factors will have to be considered. Japan should not expect access to:

- 1 Areas of obvious strategic importance to the Allied Nations
- 2 Areas which are adjacent to other nations and are fully managed and exploited
- 3 Areas within which Japanese producers are obviously inefficient by world standards

"Access" furthermore should be granted only on conditions which guarantee strict observance of accepted conservational regulations.

Within the limits circumscribed by these considerations, however, there are fishing areas which could be used by Japan and are now outside the authorized fishing area.

These fishing grounds can be effectively exploited from Japan. Japan has the fishing skill, the fishing equipment, the market, and the need for food. Although the food problem can never be solved through the fishing industry alone, Japan's food sources in relation to requirements will be so limited that opportunity for further development of fishing must be seriously considered as long as there are poorly exploited fisheries in her neighborhood.

The solutions to Japan's problems are many-sided, and they can receive assistance from sympathetic Allied action. Such action need not be indulgent, but it can be understanding. The most important actions relating to Japan's economic future must, of course, be Japanese -- actions like scientific effort to increase production, scientific effort toward efficient consumption, and stabilization of population. The Allied Nations, however, have it within their power to create a favorable or unfavorable environment for Japanese action. Allied objectives would seem to be served best by assisting Japan to a stable resource base.